

REMARKS

Status of Claims

Claims 1-11 were original in the application. Claims 1-11 have been currently amended. Claims 1-11 are submitted for examination on the merits.

Objections to the Specification

The specification and the abstract have been amended per the Examiner's request, namely the suggested paragraph has been inserted into page 1 of the specification and any phrases which can be implied have been removed from the abstract.

Objection to the Drawings

In the latest Office Action, the Examiner stated that the drawings must show every feature of the invention specified in claims, namely the "inner arcuate structural member" and "outer arcuate structural member" as found in claim 5.

Accordingly, claims 1, 5, and 8 have been amended to be more specific and the terms "outer" and "inner" have been removed from each claim and a more narrow, alternative phrasing has been inserted into their place in each instance. Originally in the context of the application as filed, the term "outer arcuate structural member" referred to an arcuate structural member 13 that was more radially distant from the central hub than its adjoining more "inner arcuate structural member", or arcuate structural member 13 that was less radially distant. Basis for the amendments

can be found in Figs. 1, 2, and 3 and in paragraph [0067] of the application as filed which states in pertinent part:

"As can be seen throughout the drawings, in a preferred embodiment the present invention provides a dish assembly 10 having a central hub 11, an outer rim member 12, and a plurality of concentric arcuate structural members 13 extending from central hub 11 to outer rim member 12 (see FIG. 1)."

Therefore, since no new matter has been added by the amendments, the drawings now fully show each feature of the invention specified in the claims and the objection should be removed.

Objections to the Claims

Claims 1-11 have been amended per the Examiner's request.

Rejection Pursuant to 35 USC 112

In the latest Office Action, the Examiner rejected claim 1 as being indefinite for failing to point out and distinctly claim the subject matter which the Applicant regards as their invention, namely it was not clear to the Examiner how the arcuate structural members are of box section configuration, what the term "their" referred to, what the term "load" referred to, and how the "load" could transfer from an outer arcuate structural member to an inner arcuate structural member.

With regards to the arcuate structural members being of box section

configuration, clear explanation of the claimed feature can be found in Figs. 7, 9A, and 9B as well as paragraph [0069] of the application as filed which states in full:

"Arcuate structural members 13 have an upper and lower channel member 18,19 (see FIGS. 7 to 9) which cooperate to provide the box-section configuration. As seen in FIGS. 10 to 13, upper and lower channel members 18,19 are formed from substantially rectangular metal sheeting 20. Upper and lower channel members 18,19 have transverse ribs 21 formed within the channel across the channel base 22 between the channel flanges 23,24."

Here and especially in Fig. 7, the box section configuration is fully shown. Fig. 9A and 9B clearly depict that each concentric ring 13 is comprised of an upper and lower channel member 18, 19. These upper and lower channel members 18, 19, are both rectangular in shape and when they are coupled together to form the arcuate structural member 13 as seen in Fig. 7, they form an overall shape that resembles a series of hollow "boxes" set out in a circular pattern. Each of these circular patterns of "boxes" forms a ring, and in turn a series of these concentric rings form the dish 10 as best seen in Figs. 1, 2, and 3.

With regards to the term "their", the term originally refers to the arcuate structural members 13. As seen in Fig. 7, each arcuate structural member 13 has an inner surface 14 and an outer surface 15. Accordingly, claim 1 has been amended to make this feature more apparent.

With regards to the term "load", claim 1 has been amended to state that

the "load" is a gravitational or wind load which are inherently present on the dish 10 during use. Basis for the amendment can be found in paragraph [0107] of the application as filed which states in full:

"The transfer of the gravitational and wind loads in the dish is in part via each polygonal ring sector terminating at the radial bracing plates that are rod braced to the hub by rods 48. The flanged box section intercept when attached to the bracing plate, reinforces the plate against local buckling."

With regards to how the loads are transferred from a radially outward arcuate structural member 13 to an adjoining more radially inward arcuate structural member 13, claim 1 has been amended to state that the inner surface 14 of each arcuate sectional member 13 comprises a fin 29 disposed thereon. As disclosed in paragraph [0107] of the application as filed, this fin 29 engages with a matching cavity 30 disposed on the outer surface 15 of the next adjoining more radially inward arcuate structural member 13. Therefore when an incoming load, such as from wind, bends an arcuate structural member 13, it also bends the fin 29 disposed on its inner surface 14, which in turn bends the next adjoining more radially inward arcuate structural member 13 and so on. This process is repeated until the load reaches the central hub 11 of the dish 10.

In the latest Office Action, the Examiner rejected claim 6 as being indefinite for failing to point out and distinctly claim the subject matter which the Applicant regards as their invention, namely it was not clear to the Examiner what the

term "channel" referred to, and that there was insufficient antecedent basis for the limitations "the channel base" and "the channel flanges."

With regards to the term "channel", the term is referring to both the upper and the lower channel members 18, 19. In Figs. 9A and 9B, both upper channel member 18 and lower channel member 19 comprise a transverse rib 21 across their respective channel base 22 between the channel flanges 23, 24, the rib 21 being formed from the base 22. Accordingly, claim 6 has been amended to more distinctly claim this feature.

With regards to the antecedent basis for the limitations "the channel base" and "the channel flanges", both limitations have been added to claim 3 thus making the reference to them in claim 6 proper. No new matter has been added by this amendment as a channel base 22 and channel flanges 23 and 24 are all clearly seen within the upper and lower channel members 18, 19 depicted in Figs. 9A and 9B.

In the latest Office Action, the Examiner rejected claim 7 as being indefinite for failing to point out and distinctly claim the subject matter which the Applicant regards as their invention, namely that there was no antecedent basis for the limitations "the fold" and "the arc", and it was not clear to the Examiner what the term "the other" referred to.

With regards to the limitations "the fold" and "the arc", proper antecedent basis has been placed within the claim by replacing "the fold" with "the inwardly folded portion of the base", and "the arc" with "an arc."

With regards to the term "the other", claim 7 has been amended to state that "the other" now reads as "the other flange."

In the latest Office Action, the Examiner rejected claim 8 as being indefinite for failing to point out and distinctly claim the subject matter which the Applicant regards as their invention, namely that there is insufficient antecedent basis for the limitations "the flanges" and "the respective toes", if the term "load" referred to is the same "load" stated in claim 1, and what the phrase "an 40 adjoining inner arcuate structural member" referred to.

With regards to the limitations "the flanges" and "the respective toes", claim 8 has been amended so that proper antecedent is now present. "The flanges" of claim 8 now refer to the same said flanges presented in claim 3, and "the respective toes" has been replaced with "the respective bases." The term "bases" refers to an inherent feature of the upper and lower arcuate structural members as seen in Figs. 7-9B and therefore no new matter has been added.

With regards to the term "load", the term does in fact refer to the same "load" stated in claim 1, therefore the term "said" has been added.

With regards to the phrase "an 40 adjoining inner arcuate structural member", the phrase has been changed to match claim 1, namely that the phrase has been amended to state "an adjoining more radially inward arcuate structural member." The numeral "40" was a typo and has been removed.

In the latest Office Action, the Examiner rejected claim 9 as being indefinite for failing to point out and distinctly claim the subject matter which the Applicant regards as their invention, namely that there is insufficient antecedent basis for the limitation "the flanges".

With respect to the limitation and to the Examiner, the term "the flanges"

does not appear in claim 9. It is respectfully requested that if the Examiner has another limitation in mind when making the rejection of claim 9, to clearly state which limitation is objected to in a subsequent office action or remove the rejection of claim 9.

Rejection Pursuant to 35 USC 102

In the latest Office Action, the Examiner rejected claims 1-11 as being anticipated by U.S. Patent 5,104,211 ("Schumacher"). The Applicant respectfully disagrees.

With regards to claim 1, the Examiner states that Schumacher discloses a dish assembly including a central hub (21), an outer rim member (25), and a plurality of concentric arcuate structural members (13) extending from the central hub (21) to the outer rim member (25) as illustrated in Figs. 1 and 2. The Examiner also asserts the arcuate structural members (22) are of box section configuration and abut along their inner and outer arcuate surfaces such that load can be transferred from an outer to an inner member. By this reasoning, claim 1 is anticipated by Schumacher.

The Applicant respectfully disagrees with the examiner's assertion. It is noted that an explanation of "box-section configuration" is provided in paragraph [0011] of the present application which states in full:

"As used herein the expression "box-section configuration" refers to a structural member having at least three sides of which all or all except one, are wall members, the one excepted side if not a wall member being braced to maintain the box-section configuration when the arcuate structural member is under load."

The Applicant submits that the arcuate structural members (22) of Schumacher are not box sectional in configuration as required by present claim 1. In support thereof, Fig. 3 and column 4, lines 40-58 of Schumacher wherein a cutaway illustration of an arcuate structural member (22) is shown and described. The member (22) is comprised of flat reflective panel strips (14) connected to a pair of quartz-graphite cords (43, 44). Tension ties (45) are located between the cords. The bottom cord (43) is attached to radially extending ribs (51, 52) while the top cord (44) is attached to tape members (61, 62). The Applicant respectfully fails to see how this arcuate structural member can be considered to be of "box sectional configuration". The only integer which may even be thought of as a wall is panel strips (14). Moreover, the one excepted side is not braced. In addition, present claim 1 requires the arcuate structural members abut along their inner and outer arcuate surfaces such that load can be transferred from an outer member to an inner member. In direct contrast, the Applicant submits that none of the panel strips (14) of Schumacher touch each other. Instead, they are arranged with a slight side-by-side separation as denoted by lines (31) in Fig. 1 and spaced apart from one another in the radial direction as depicted as lines (32) in Fig. 2, and in the corresponding description in column 4, lines 27-35. The cord pairs (43, 44) are all spaced well apart from each other as seen in Figs. 3 and 5. Thus the Applicant is unable to see how load can be transferred between a radially outward arcuate structural member (22) to an adjoining more radially inward arcuate structural member (22) of Schumacher as required by present claim 1. The rejection of claim 1 should therefore be removed for at least these reasons.

With regards to claim 2, the claim is dependent upon claim 1 and therefore should be allowed on the same grounds stated above, which grounds are herein reinstated.

With regards to claim 3, the Examiner further contended that Schumacher discloses wherein the arcuate structural members have an upper and lower channel members (41, 43) which cooperate to constitute the box section configuration.

The Applicant respectfully submits that cords (41, 43) cannot be considered channel members because they do not nearly have the same substantial shape of the upper and lower channel members 18 and 19 of the current application. The shape of the upper and lower channel members 18 and 19 is significant because when coupled together, they form the box section configuration that is crucial to the current device's operation. The cords (41, 43) found in Schumacher are more like simple upper and lower substrates in which the tensioned ties (45) may be disposed between. In addition to not forming the box section configuration as stated above with regards to claim 1, claim 3 as currently amended states that the upper and lower channel members comprise a pair of channel flanges. Schumacher within the cited Figs. 1-5 and 9A-9B and the corresponding description does not disclose such a feature on the said cords 41 and 43. Therefore, the rejection of claim 3 should be removed for at least these reasons.

With regards to claims 4 and 5, the Examiner contended that Schumacher discloses in Figs. 1-5 and 9A-9B wherein the upper and lower channel members (41, 43) of the arcuate structural members are formed from substantially metal sheeting.

In column 4, line 44 of Schumacher it is disclosed that the cords 41 and 43 are made from "flexible quartz-graphite." Quartz-graphite as known to those in the art is a soft, pliable carbon based mineral. Therefore it cannot be said that even if the cords 41 and 43 could be considered as upper and lower channel members of the current invention, that they are comprised substantially of metal as is currently claimed in claims 4 and 5. Therefore the rejections of claims 4 and 5 must be removed for these reasons.

With regards to claims 6 and 7, the Examiner further contended that Schumacher discloses wherein the upper and lower channel members have a transverse rib formed within the channel across the channel base between the channel flanges, the rib being formed of the base and further wherein the rib is formed by folding inwardly a portion of the base, the fold being deeper at one flange than the other such that the rib is correspondingly deeper at one flange than the other, whereby the rib constitutes a cantilever and whereby the edges of the rectangular sheet becomes angled about the rib to thereby form the arc in the arcuate member. The Applicant respectfully disagrees.

While the Examiner is correct in stating that Schumacher discloses a transverse rib (17) in Fig. 9A for supporting the structure of the disclosed device, it does not nearly disclose the transverse rib 21 that is claimed within claims 6 and 7. In the current application, the rib 21 is part of the structure of the upper and lower channel members 18 and 19 as shown in Figs. 9A and 9B, namely a segment of the base 22 of the upper and lower channel members 18 and 19 has been folded over to form the rib 21 in the specific manner detailed in claims 6 and 7. In direct contrast, the rib (17) as disclosed in Schumacher is a separate structural element that extends from the central

hub (21) to the outer rim member (25) in a frame like manner, much like the support structure found in a typical umbrella. The plurality of ribs (21) found in Schumacher are not part of the cords (41, 43) themselves and thus do not contain an important limitation present in claims 6 and 7. Schumacher cannot therefore anticipate the use of transverse ribs that are described in claims 6 and 7 and the rejections of the aforementioned claims should be removed for at least these reasons.

With regards to claim 8, the claim is similarly distinguished from Schumacher on the same grounds presented above with regards to claim 3, which grounds are herein reinstated.

With regards to claims 9 and 10, the Examiner contended that Schumacher discloses a plurality of mirrors affixed to the bases of the upper channel members.

In column 6, lines 23-33 of Schumacher states the following:

"Each reflective panel strip 14 is preferably comprised of low mass graphite-epoxy (typically two layers of bidirectional graphite cloth impregnated with a compatible resin system) over which a reflective coating, such as vapor-deposited silver, is formed. The front or reflective side of the panel is made resin rich, resulting in a smooth glass-like substrate surface on which the silver reflective coating may be vapor deposited. An additional layer of a transparent material such as magnesium fluoride is then applied to the front surface to serve as a protective coating."

In paragraph [0077] of the current application, the mirrors are disclosed as being "glass sheets." Claims 9 and 10 have therefore been amended to include that the mirrors affixed to the bases of the upper channel members are comprised of glass. It is important to note that while Schumacher uses a reflective panel strip that is "glass-like", it is not in fact made of glass and therefore does not contain the performance characteristics that are associated with that of a glass mirror which are well known to those skilled in the relevant art.

With regards to claim 11, the Examiner further contended that Schumacher discloses a dish support member supportable on a foundation and receivable within an opening in the hub member and adapted to cooperate therewith to elevate the dish assembly with respect to the foundation.

It is respectfully submitted by the Applicant that Schumacher does not disclose a dish support member 32 and a foundation 33 on which the dish assembly is elevated above by the dish support member 32 in any of the drawings or in the corresponding detailed description. The Examiner relies on Figs. 9-13 of Schumacher as disclosing the above named feature; however Figs. 9-13 of Schumacher are related to a deployable truss structure and its related components which support a dish assembly. Schumacher neither teaches nor suggests the use of a foundation or how a dish support member or structure elevates the dish assembly above said foundation as is claimed in claim 11. Since the claimed limitations of current claim 11 are not found in the cited prior art, the rejection of the claim must be removed.

Accordingly, the Applicant respectfully requests advancement of the
claims to allowance.

Respectfully submitted,

A handwritten signature in cursive script, reading "Daniel L. Dawes". The signature is fluid and elegant, with a large initial 'D' and 'L'.

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